10
Noise

The purpose of San Ramon's Noise Element is to set forth policies that regulate the ambient noise environment and protect residents from exposure to excessive noise.

Noises vary widely in their scope, source, and volume, ranging from individual occurrences such as leaf blowers, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on freeways. Noise is primarily a concern with regard to noise–sensitive uses such as residences, schools, churches, and hospitals. Figure 10-1 shows the decibel levels associated with different common sounds, and illustrates typical sound levels, while Figure 10-2 provides noise level criteria for a variety of land uses.

Noise is commonly defined as undesirable or unwanted sound. The major noise source in San Ramon is vehicular traffic on Interstate 680, some residential streets, and near some schools and shopping centers. Other noise sources include overflights from Livermore and Buchanan Airfields, and flight operations and training from the Camp Parks Reserve Forces Training Area. Noise produced by industrial facilities has a negligible effect on the City's noise environment.

Sound levels are usually measured and expressed in decibels (dB). Noise descriptors used for analysis need to account for human sensitivity to nighttime noise. Common descriptors include the Community Noise Equivalent Level (CNEL) and

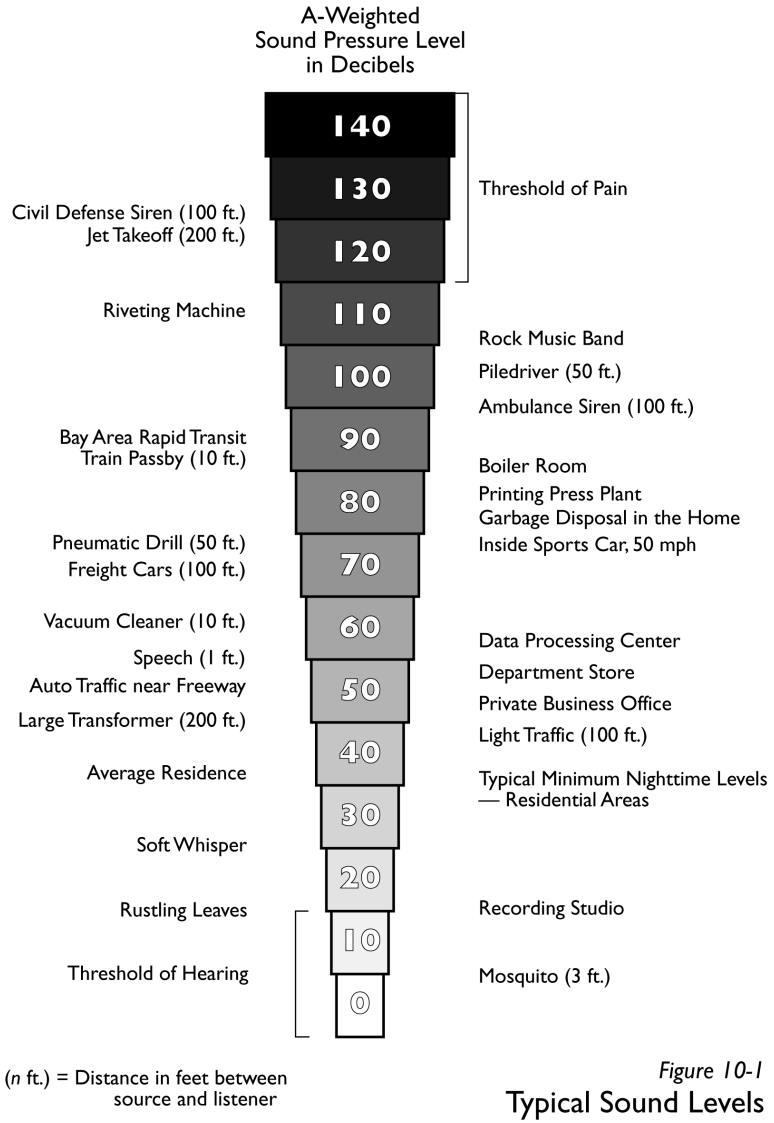

Figure 10-1
Typical Sound Levels

Figure 10-2
Land Use Compatability

the Day-Night Average Level (DNL, symbol (L_{dn}). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for State noise law.

Knowledge of the following relationships is helpful in understanding how changes in noise and noise exposure are perceived:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived;
- A 3 dB change is considered a just-noticeable difference;
- A 5 dB change is required before any noticeable change in community response would be expected. A 5 dB increase is often considered a significant impact; and
- A 10 dB increase is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

10.1 NOISE IN SAN RAMON

Noise in San Ramon is the result of both traffic and other sources. The nature of this noise is outlined below.

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. Traffic volume has a lesser influence on traffic noise levels. The primary source of noise from automobiles is high frequency tire noise, which increases with speed. In addition, trucks and older automobiles produce engine and exhaust noise, and trucks also generate wind noise.

While tire noise from autos is generally located at ground level, truck noise sources can be located as high as ten to fifteen feet above the roadbed due to tall exhaust stacks and higher engines. Sound walls are not effective for mitigating such noise unless they are very tall.

According to common practice for residential areas, CNEL noise exposure up to 60 dB is considered "normally acceptable" for unshielded residential development. Noise levels from 60 to 70 dB fall within the "conditionally unacceptable" range, and those in the 70 to 75 dB range are considered "normally unacceptable".

TRAFFIC NOISE LEVELS

The San Ramon Planning Area is subject to noise impacts from several transportation corridors, as illustrated in Figure 10-3.

Figure 10-4 illustrates future contours throughout the Planning Area. By far the greatest contributor to noise is traffic on I-680. The State Department of Transportation has constructed sound walls adjacent to the freeway and existing nearby homes, but this measure has increased ambient noise levels for residences located uphill and at greater distances from the sound walls. This traffic noise thus presents the City with the challenge of providing adequate noise mitigation without more sound walls along the freeway or throughout the City. Other areas that will experience significant increases in ambient noise levels include Crow Canyon Road, Bollinger Canyon Road, Old Ranch Road, and Dougherty Road.

OTHER NOISE

Although traffic is the primary source of noise in San Ramon, other sources do exist. These sources include construction, maintenance and repair activities, manufacturing activities, lawn care activities, etc. The policies of this Chapter address the full range of these sources.

GUIDING POLICY

10.1-G-1 Strive to achieve an acceptable noise environment for the present and future residents of San Ramon.

IMPLEMENTING POLICIES

10.1-I-1 Minimize vehicular and stationary noise sources and noise emanating from temporary activities.

The City's regulations restrict the hours of operation for a variety of noise sources, and State laws limit the noise levels of motor vehicles and some activities at industrial plants.

10.1-I-2 Require a noise study for all projects that have noise exposure greater than "normally acceptable" levels indicated in Figure 10-2.

If noise exposure is greater than levels considered normally acceptable, some form of noise mitigation will have to be incorporated, to the extent practicable, unless the impacts are found to be less than significant. The mitigation can be conventional insulation features or techniques that require more complex building or equipment design and site layout. The City applies the standards of Title 24,

Part II of the California Code of Regulations to all housing, thereby requiring an acoustical study if a proposed development will be located in an area exposed to a DNL (Day-Night Average Sound Level) in excess of 60 dB. The Code requires mitigation to reduce the DNL to 45 dB in all habitable rooms.

10.1-I-3 Develop uniform guidelines for acoustical studies based on current professional standards.

Uniform guidelines for the preparation of noise studies will help applicants understand City requirements for adequate acoustical evaluation.

10.1-I-4 Include noise attenuation measures in new developments that expose the community to greater than "normally acceptable" noise levels.

Open space, building orientation and design, and landscaping and running water can be used to buffer or mask sound. The new City Center complex is an area where these techniques can be used.

10.1-I-5 Discourage the use of sound walls.

The construction of sound walls will be considered where noise mitigation to acceptable levels by other means is not feasible.

10.1-I-6 Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means, including, but not limited to, the following actions:

- Screen and control noise sources, such as parking and loading facilities, outdoor activities and mechanical equipment,
- Increase setbacks for noise sources from adjacent dwellings,
- Retain fences, walls, and landscaping that serve as noise buffers,
- Use soundproofing materials and double-glazed windows,
- Control hours of operation, including deliveries and trash pickup, to minimize noise impacts, and
- As a last resort, construct noise walls along highways and arterials when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility.

Mitigation for noise impacts should not transfer noise from one resident to another. Proposed development can introduce potential noise sources, even when it is compatible with existing adjacent uses. An example is the handling of large trash bins for multi-family housing. Site design and/or screening techniques can help mitigate the resulting noise.

10.1-I-7 Minimize noise impacts of flight operations on existing noise-sensitive development.

10.1-I-8 Protect especially sensitive uses, including schools, hospitals, and senior care facilities, from excessive noise.

10.1-I-9 Implement the City's regulations and performance standards for noise control to ensure appropriate regulation of common residential, commercial, and industrial noise sources.

10.1-I-10 Require new noise sources to use best available control technology (BACT) to minimize noise from all sources.

10.1-I-11 Accept applications from residents for exceptions to the 60 dB Residential Noise Level for the operation of standby electrical equipment used to meet medical needs.

This assumes that equipment noise will be mitigated to reduce the noise level at the property line to the 60 decibel level requirement.